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Date: January 28, 2008/Rebecca Stanford/
Rebecca Stanford**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re patent application of:

Applicant(s): Michael L. Trompower

Examiner: Naghmeh Mehrpour

Serial No: 09/483,399

Art Unit: 2686

Filing Date: January 14, 2000

Title: IMPROVED 802.11 NETWORKS USING DYNAMIC POWER CONTROL FOR RF TRANSMISSION

Mail Stop Appeal Brief – Patents
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APPEAL BRIEF

Dear Sir:

Appellant's legal representative submits this brief in connection with an appeal of the above-identified patent application. A credit card payment form is filed concurrently herewith in connection with all fees due regarding this appeal brief. In the event any additional fees may be due and/or are not covered by the credit card, the Commissioner is authorized to charge such fees to Deposit Account No. 50-1063 [TELNP200US].

I. Real Party in Interest (37 C.F.R. §41.37(c)(1)(i))

The real party in interest in the present appeal is Telxon Corporation, the assignee of the present application.

II. Related Appeals and Interferences (37 C.F.R. §41.37(c)(1)(ii))

Appellant, appellant's legal representative, and/or the assignee of the present application are not aware of any appeals or interferences which may be related to, will directly affect, or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. Status of Claims (37 C.F.R. §41.37(c)(1)(iii))

Claims 1, 19, and 33 have been canceled. Claims 20-31 have been allowed, and claims 4-6, 34, and 35 have been objected to as being dependent upon a rejected based claim. Claims 2, 3, 7-18, and 32 stand rejected by the Examiner. The rejection of claims 2, 3, 7-18, and 32 is being appealed.

IV. Status of Amendments (37 C.F.R. §41.37(c)(1)(iv))

No claim amendments have been filed after the Final Office Action.

V. Summary of Claimed Subject Matter (37 C.F.R. §41.37(c)(1)(v))**A. Independent Claim 2**

Independent claim 2 relates to a communication unit in a cellular communication system. The unit includes a transmitter that transmits data over an RF link and a power control module coupled to the transmitter. The power control module receives a data packet having a first portion and a second portion and transmits the first portion at a first transmission power and the second portion at a second transmission power. The communication unit transmits the first portion of the data packet at a first data rate and the second portion of the data packet at a second data rate. (*See e.g.*, page 4, lines 3-6).

B. Independent Claim 32

Independent claim 32 relates to a cellular communication system that includes means for transmitting a data packet having a first portion and a second portion and means for dynamically adjusting the transmission power level of the first portion with respect to the second portion of the data packet coupled to the means for transmitting a data packet having a first portion and a second portion. The system also includes a means for determining the transmission power levels of the first and second portion based on a desired transmission range for both the first and second portion. (*See e.g.*, FIGS. 1-7; page 3, line 14 – page 4, line 2; page 4, line 24 – page 5, line 2; page 9, line 18-page 10, line 19).

The means for limitations described above are identified as limitations subject to the provisions of 35 U.S.C. §112 ¶6. The corresponding structures are identified with reference to the specification and drawings in the parentheticals above corresponding to those claim limitations.

VI. Grounds of Rejection to be Reviewed (37 C.F.R. §41.37(c)(1)(vi))

A. Claims 2, 3, 7, 8, and 18, stand rejected under 35 U.S.C. §102(e) as being anticipated by Paatelma (US 6,463,042 B1).

B. Claims 9-17 and 32 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Paatelma in view of Fisher, *et al.* (US 5,768,695).

VII. Argument (37 C.F.R. §41.37(c)(1)(vii))**A. Rejection of Claims 2, 3, 7, 8, and 18 Under 35 U.S.C. §102(e)**

Claims 2-5, 7-8, 18, 20-28 and 34-35 stand rejected under 35 U.S.C. §102(e) as being anticipated by Paatelma (US 6,463,042 B1). Reversal of this rejection is respectfully requested for at least the following reasons. Paatelma fails to teach or suggest each and every element of the subject claims.

For a prior art reference to anticipate, 35 U.S.C. §102 requires that “**each and every element** as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950 (Fed. Cir. 1999) (quoting *Verdegaal Bros., Inc. v. Union Oil Co.*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)) (emphasis added).

The claimed subject matter relates generally to communication in a cellular communications system in which a transmission range of a signal can be a function of a data rate of the signal as well as a function of a power level of the signal. For example, at a given fixed *power level*, a signal at a higher data rate has a smaller transmission range than a signal at a lower data rate. (See Fig. 3). Conversely, at a given fixed *data rate*, a signal at higher power will have a larger transmission range than a signal at a lower power. (C.f. FIGS. 4a-d). Therefore, by adjusting the power levels of different portions of a data packet *that have different data rates*, a more uniform transmission range *for the entire data packet* can be achieved. (See pg. 6, ll. 18-21). In particular, independent claim 2 recites, “the communication unit transmits *the first portion of the data packet at a first data rate and the second portion of the data packet at a second data rate.*” Paatelma does not teach or suggest these features.

Rather, Paatelma relates to a mobile station power-saving method that transmits the header portion of a data packet at a higher power level than the data portion of the packet when the data portion can be ignored. As a result, the mobile station can enter a power-saving mode after receiving enough of the data portion to detect that portion was transmitted at a lower power level. (See Abstract; col. 4, ll. 58-65). While Paatelma discloses that the header and the data portions can be transmitted at different power levels, the reference is utterly void of any teaching or suggestion that the header and data portions are transmitted at different *data rates*. Accordingly, Paatelma does not teach or suggest the communication unit transmits *the first portion of the data packet at a first data rate and the second portion of the data packet at a second data rate*. The Examiner has rejected this claim without ever addressing these aspects, for which Paatelma is silent. Thus, this rejection cannot be maintained and should be reversed.

Most particularly, Paatelma is utterly void of any teaching or suggestion relating to *data rates*. Rather, Paatelma discusses *power levels*, but discloses nothing regarding *data rates*. The entirety of the arguments set forth since the Examiner reopened prosecution during the previous

appeal relate only to power levels. In fact, appellant has not and does not dispute that Paatelma discloses, “the Header portion of the slot is transmitted at normal power while the remainder of the slot [e.g., data portion] is transmitted at a reduced power level relative to the Header portion” (see Paatelma, col. 4, ll. 63-65). However, appellant has continually noted that Paatelma does not address or acknowledge data rates or the real fact that by lowering the power level of the data portion relative to the header portion, the transmission range of the data portion will be shorter than the transmission range for the header portion of the same data packet. Therefore, while Paatelma discusses a data packet with first and second portions transmitted at different power levels, the reference is entirely void of elements that relate to desired transmission ranges and, as applicable to independent claim 2, entirely void of elements that relate to first and second portions transmitted at different data rates. As a result, Paatelma is clearly deficient to read upon the subject claim. However, the Examiner relies upon Paatelma to anticipate the subject claim by ignoring all portions of the claim that relate to data rates. For example, independent claim 2 recites:

a power control module coupled to the transmitter, the power control module receives a data packet having a first portion and a second portion and transmits the first portion at a first transmission power and the second portion at a second transmission power, ***the communication unit transmits the first portion of the data packet at a first data rate and the second portion of the data packet at a second data rate.***

The Examiner has provided no analysis with respect to the last 29 words (indicated in bold type). For example, see Office Action mailed April 3, 2007, at page 3. See also Final Office Action mailed August 1, 2007, at page 2. In both instances, the Examiner ends examination of the claim at the words “...at a second transmission power.” Accordingly, it is readily apparent that the Examiner has rejected this claim without considering ***each and every element*** of the claim, and without examining the claim in its entirety. In particular, nowhere in the Examiner’s Replies are the elements, “the communication unit transmits ***the first portion of the data packet at a first data rate and the second portion of the data packet at a second data rate***” considered by the Examiner, much less rejected under 35 U.S.C. §102 based upon teachings of Paatelma. Accordingly, this rejection of the subject claim fails to meet the requirements set forth in 35 U.S.C. §102 and should be reversed.

B. Rejection of Claims 9-17 and 32 Under 35 U.S.C. §103(a)

Claims 9-17, 32 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Paatelma (US 6,463,042) in view of Fisher, *et al.* (US 5,768,695, hereinafter referred to as “Fisher”). This rejection should be withdrawn for at least the following reasons. Neither Paatelma nor Fisher, either alone or when combined, teach or suggest all the claimed features.

To reject claims in an application under §103, an examiner must establish a *prima facie* case of obviousness. To establish a *prima facie* case of obviousness, the prior art reference (or references when combined) ***must teach or suggest all the claim limitations***. In addition, there must be a reasonable expectation of success to make the proposed combination. *See In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). “[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR v. Teleflex*, 550 U.S. ___, 127 S. Ct. 1727 (2007) *citing In re Kahn*, 441 F. 3d 977, 988 (CA Fed. 2006).

In particular, claims 9-17 depend either directly or indirectly from independent claim 2, which is believed to be allowable over Paatelma. The addition of Fisher, which relates to a user-programmable device for configuring of ramp-up and ramp-down control signals for a radio based upon certain timing sequences (*see* Abstract), does not cure the deficiencies extant in Paatelma with respect to independent claim 2. Accordingly, this rejection of dependent claims 9-17 should be withdrawn.

Regarding independent claim 32, the claim recites, “means for determining the transmission power levels of the first and second portion ***based on a desired transmission range for both the first and second portion***”, which is neither taught nor suggested by Paatelma, Fisher, or any suitable combination thereof. At page 9 of the Final Office Action, the Examiner argues “Paatelma inherently teaches the processor evaluating a range from the transmission”, citing column 2, lines 36-45. Applicant’s representative rejects this contention, as Paatelma neither expressly nor inherently teaches evaluating suitable transmission ranges. At the portions of the reference indicated, Paatelma simply notes that the header portion is transmitted at a higher power level than the data portion ***when the data portion contains invalid data*** (*e.g.*, so the

receiver can save power by ignoring the invalid data). Moreover, even if Paatelma did inherently teach evaluating suitable transmission ranges, there is nothing to suggest the reference employs this inherently determined desired transmission range for determining the transmission power levels.

Furthermore, Paatelma provides for a data portion that has a *lower* power level and therefore a *smaller* transmission range, whereas transmission range difficulties occur because the transmission range of the data portion is smaller than the transmission range of the header portion because header portions are typically transmitted at a lower data rate. Thus, as applied to the claimed subject matter, the method of Paatelma further compounds this difficulty in that the data portion of a packet will have a smaller transmission range not only due to a higher data rate but also because Paatelma *reduces* the power level. For at least this reason, it is readily apparent that transmission range is neither contemplated by nor a concern of Paatelma, and thus cannot be an inherent feature as the Examiner suggests. Rather, Paatelma's method expressly teaches away from the argument of inherency with respect to the Examiner's analysis. For example, the Examiner argues Paatelma inherently considers transmission ranges, yet for this argument to be germane, Paatelma would have to at least teach that the power level for the data portion is *increased*, not *decreased* as disclosed. By transmitting the header portion at a higher power level than the data portion, Paatelma is forever incapable of attaining a data packet that has a uniform transmission range. Fisher does not remedy these shortcomings. Accordingly, this rejection should be reversed.

C. Conclusion

For at least the above reasons, the claims currently under consideration are believed to be patentable over the cited references. Accordingly, it is respectfully requested that the rejections of claims 2-18, 20-32, 34 and 35 be reversed.

If any additional fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063 [TELNP200US].

Respectfully submitted,
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VIII. Claims Appendix (37 C.F.R. §41.37(c)(1)(viii))

1. (Cancelled)
2. A communication unit in a cellular communication system, the unit comprising:
a transmitter that transmits data over an RF link; and
a power control module coupled to the transmitter, the power control module receives a data packet having a first portion and a second portion and transmits the first portion at a first transmission power and the second portion at a second transmission power, the communication unit transmits the first portion of the data packet at a first data rate and the second portion of the data packet at a second data rate.
3. The unit of claim 2, the first transmission power and the second transmission power are selected so that the first portion and the second portion have similar transmission ranges.
4. The unit of claim 2, the data packet includes a third portion and the power adjustment module receives the data packet having the third portion and transmits the third portion at a third transmission power.
5. The unit of claim 4, the communication unit transmits the first portion of the data packet at a first data rate, the second portion of the data packet at a second data rate and the third portion of the data packet at a third data rate.
6. The unit of claim 5, the data packet conforms to the IEEE 802.11 standard protocol and the first portion of the data packet is a PLCP preamble, the second portion of the data packet is a PLCP header and the third portion of the data packet is a data portion.
7. The unit of claim 2, the communication unit is an access point system.
8. The unit of claim 2, the communication unit is a mobile communication unit.

9. The unit of claim 2, the power control module includes a transmission power amplifier adapted to receive the power data packet and dynamically control the transmission power of the first portion and the second portion.

10. The unit of claim 9, the power control module includes a D/A converter that receives power data information in digital format and that converts the power data information to an analog control signal, the analog signal controls the transmission power of the transmission power amplifier.

11. The unit of claim 10, further including a processor coupled to the D/A converter, the processor transmits the power data information to the D/A converter.

12. The unit of claim 11, further including a receiver coupled to the processor, the receiver receives a transmission from other communication units.

13. The unit of claim 12, the receiver provides transmission power information to the processor from a transmission communication unit transmitting information to the receiver, the processor evaluating a range from the transmission power information and downloading power data information to the power control circuit based on a desired transmission range of the data packet.

14. The unit of claim 10, the power control module includes a power data register section coupled to the D/A converter, the power data register module stores the power data information and provides the power data information to the D/A converter.

15. The unit of claim 14, further including a processor coupled to the power data register section, the processor transmits the power data information to the power data register section.

16. The unit of claim 15, further including a receiver coupled to the processor, the receiver receives a transmission from other communication units.

17. The unit of claim 16, the receiver provides transmission power information to the processor from a transmission communication unit transmitting information to the receiver, the processor evaluates a range from the transmission power information and downloads power data information to the power control circuit based on a desired transmission range of the data packet.
18. The unit of claim 2, the communication unit is coupled to a network and the network provides the power control circuit with information relating to the power transmission level of the first portion and the second portion.
19. (Cancelled)
20. A method of transmitting a data packet in a cellular communication system, comprising:
transmitting a first portion of the data packet at a first transmission power level;
transmitting a second portion of the data packet at a second transmission power level; and
transmitting a third portion of the data packet at a third transmission power level.
21. The method of claim 20, the first portion of the data packet is transmitted at a first data rate and the second portion of the data packet is transmitted at a second data rate.
22. The method of claim 20, the first power level and the second power level are adjusted so that the first portion and the second portion have essentially the same transmission range.
23. The method of claim 20, further comprising providing a communication unit prior to transmitting a first portion of the data packet at a first transmission power level, the communication unit including a transmitter, a power control module coupled to the transmitter, a processor coupled to the power control module and a receiver coupled to the processor.
24. The method of claim 23, the processor provides the power control module with the first transmission power and the second transmission power after providing a communication unit and prior to transmitting a first portion of the data packet at a first transmission power level.

25. The method of claim 24, the processor evaluates the first transmission power and the second transmission power based on a desired transmission range for the first portion and the second portion of the data packet.

26. The method of claim 25, the processor evaluates the first transmission power and the second transmission power based on a desired transmission range for the first portion and the second portion of the data packet based on a transmission power level of a transmission received from another mobile communication unit.

27. The method of claim 25, the communication unit is coupled to a network and the processor evaluates the first transmission power and the second transmission power based on a desired transmission range for the first portion and the second portion of the data packet, the network providing the processor information relating to the desired transmission range.

28. The method of claim 20, the power level of the first portion and the second portion is dynamically adjusted during the transmission of the data packet.

29. An access point system in a cellular communication system utilizing an IEEE 802.11 standard protocol, comprising:

- a transmitter that transmits data over an RF link;

- a power control module coupled to the transmitter, the power control module receives a data packet having a PLCP preamble and PLCP header portion and a data portion and dynamically adjusts the transmission power of the packet during transmission of the packet, such that the PLCP preamble portion begins transmitting at a first transmission power level and the data portion begins transmitting at a second transmission power level, the dynamic adjustment of transmission power made to facilitate transmitting the PLCP preamble and the data portion over a substantially similar transmission range;

- a processor coupled to the power adjustment module, the processor provides power adjustment information to the power control module; and

- a receiver coupled to the processor, the receiver receives data over an RF link, the access point system is coupled to a network.

30. The system of claim 29, the power control module includes a transmission power amplifier that receives the data packet and control the transmission power of the PLCP preamble portion and the data portion, the transmission power amplifier coupled to a D/A converter, the D/A converter receives power data information in digital format and converts the power data information to an analog control signal, the analog control signal controls the transmission power of the transmission power amplifier.

31. The system of claim 30, the power control module includes a power data register module coupled to the D/A converter, the power data register stores the power data information and provides the power data information to the D/A converter, the processor is coupled to the D/A converter, the processor transmits the power data information to the D/A converter.

32. A cellular communication system, comprising:
means for transmitting a data packet having a first portion and a second portion;
means for dynamically adjusting the transmission power level of the first portion with respect to the second portion of the data packet coupled to the means for transmitting a data packet having a first portion and a second portion; and
means for determining the transmission power levels of the first and second portion based on a desired transmission range for both the first and second portion.

33. (Cancelled)

34. The system of claim 32, the means for dynamically adjusting the transmission power level of the first portion with respect to the second portion of the data packet further provides for adjusting the power transmission level of a third portion of the data packet with respect to the first and second portions.

35. A signal transmitted over a wireless communication system, the signal comprising:
a data packet having a first portion transmitted at a first power level, a second portion transmitted at a second power level, and a third portion transmitted at a third power level.

IX. Evidence Appendix (37 C.F.R. §41.37(c)(1)(ix))

None.

X. Related Proceedings Appendix (37 C.F.R. §41.37(c)(1)(x))

None.